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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/976,412	10/12/2001	Creighton C. Kelly	5319	9945

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Milliken & Company  
P.O. Box 1927  
Spartanburg, SC 29304

EXAMINER

TORRES VELAZQUEZ, NORCA LIZ

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 10/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/976,412	<b>Applicant(s)</b> KELLY ET AL.	
	<b>Examiner</b> Norca L. Torres-Velazquez	<b>Art Unit</b> 1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed on July 26, 2004 have been fully considered but they are not persuasive.

a. Applicants argue that in the instant application, the field of Applicant's endeavor is woven or knitted wiping cloths that meet substantially all of the specifications for use in cleanrooms. Further, it is argued that the Rockwell Jr. reference is directed to a hand wiping roll towel for a bathroom and that one seeking to solve the problem of providing wiping cloths with edges would not ignore the teachings of Paley in favor of the teachings in Rockwell. Applicants further conclude that the Rockwell Jr. reference is non-analogous art.

It is the Examiner's position that the present application is directed to a "wiper" and it is noted that the wiper of the present invention can be constructed of a textile fabric selected from the group consisting of knit fabric, woven fabric and nonwoven fabric, as claimed in claim 6. Therefore, it is not limited to just woven or knitted wiping cloths as indicated by Applicants. It is noted that Applicant's claims are broader than the argued field of endeavor, the claims are directed to a "wiper" and applicants are arguing the intended use of their fabric (i.e. a low contaminant material).

It is further noted, that both Rockwell Jr. and Paley are directed to wiping cloths and for that reason the Examiner maintains her position that they are directed to the same field of endeavor. The Paley reference already provides wiping cloths with edges but it uses a continuous fused border zone instead of a discontinuous fused border zone. The

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invention of Rockwell Jr. uses a discontinuous boundary edge in the wiper and provides the motivation of using such in a wiper for providing flexibility.

Therefore, it is the Examiner's position that the references is within the field of endeavor of the art, both are directed to wipers or wiping cloths.

b. With regards to the folded double layer border limitation of claims 15 and 29, it is noted that a new rejection addressing these is incorporated herein.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over PALEY et al. (US 4,888,229) in view of ROCKWELL, Jr. (US 6,001,442).

PALEY et al. discloses a wiper for reducing particulate contamination, which otherwise might result from the use of the wiper in controlled environment, such as that maintained in a clean room, the wiper being of the type constructed at least partially from a thermoplastic fabric material. The wiper provides a fused border in the material along the peripheral edges of the wiper and extends inwardly into the wiper. (Abstract)

The reference discloses the use of materials such as polyester in the form of a knitted, woven or non-woven fabric. (Column 2, lines 50-57)

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While PALEY et al. teaches a plurality of fused perimeter edges, it teaches a continuous fused border zone. It fails to teach the claimed discontinuous fused border zone with discrete fusion points formed by localized melt fusion.

ROCKWELL, Jr. discloses a roll tower made from cotton/polyester or polyester material and teaches the use of an ultrasonically bonded, boundary edge 12 disposed on the sides of the textile surface 14. The ultrasonically bonded, boundary edges 12 preferably have a discontinuous brick-like pattern. Such a discontinuous brick-like pattern is believed to provide exceptional flexibility. (Column 2, lines 9-24; Figure 1)

Since both PALEY et al. and ROCKWELL, Jr. are directed to the same field of endeavor, the purpose disclosed by ROCKWELL, Jr. would have been recognized in the pertinent art of PALEY et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the wiper and provide it with discontinuous boundary edge (that is equated to the discontinuous fused zone of the present invention), with the motivation of providing the wiper of PALEY et al. with exceptional flexibility as disclosed by ROCKWELL, Jr. above.

5. Claims 1-3, 11-17 and 23-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over PALEY et al. (US 4,888,229) in view of LANGLEY (US 4,938,817).

PALEY et al. discloses a wiper for reducing particulate contamination, which otherwise might result from the use of the wiper in controlled environment, such as that maintained in a clean room, the wiper being of the type constructed at least partially from a thermoplastic fabric

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material. The wiper provides a fused border in the material along the peripheral edges of the wiper and extends inwardly into the wiper. (Abstract)

The reference discloses the use of materials such as polyester in the form of a knitted, woven or non-woven fabric. (Column 2, lines 50-57)

While PALEY et al. teaches a plurality of fused perimeter edges, it teaches a continuous fused border zone. It fails to teach the claimed discontinuous fused border zone with discrete fusion points formed by localized melt fusion and also fails to teach the use of a folded double layer border.

LANGLEY is related to seaming spunbonded synthetic fabric and to the preparation of cleanroom garments. The reference solves the problem of contamination by microscopic fiber particles in cleanroom environments from cut edges or needle holes produced in stitching of seams of garments used in this environment and uses instead bonded seams that include folded-over edges. (Refer to Col. 1, lines 25-40) The reference teaches the use of ultrasonic energy and pressure in predetermined spaced intervals by means such as an embossed wheel having spaced sets of serially arranged raised regions or lands. (Col. 2, lines 65-68 through Col. 3, lines 1-5) In Figure 1, the bonded area of the seam is in a discontinuous pattern.

Since both references are directed to cleanroom fabric products, the purpose disclosed by LANGLEY would have been recognized in the pertinent art of PALEY.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the boundary edge of the wiper of PALEY and provide with a discontinuous pattern bonding and also with a folded double layer border with the motivation of

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solving the problem of contamination by microscopic fiber particles in cleanroom environments from cut edges as disclosed by LANGLEY. (above)

6. Claims 4 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over PALEY et al. and LANGLEY as applied above, and further in view of MORIN et al. (US 6,189,189).

PALEY et al. and LANGLEY fail to teach heat setting the textile fabric at a temperature of from 180 to 300 degrees Fahrenheit.

MORIN et al. discloses a method of manufacturing a polyester textile fabric having a relatively low level of particulate contaminated and high absorbency is provided by heat setting the fabric at a temperature of 300°F or less. (Abstract)

The reference teaches a method of manufacturing a textile fabric for use in a clean room having the steps of constructing a knitted or woven fabric from polyester yarn, heat setting the fabric at a temperature of from 180° to 300° F, and cutting the fabric to form the desired article; wherein the polyester fiber has not been heated above the temperature of 300°F. (Column 2, lines 10-14)

The reference also teaches that the wipers of their invention may be constructed from woven or knitted polyester fibers, preferably fibers of poly (ethylene terephthalate). It is also preferable to construct the fabrics from continuous filament, polyester yarn. Examples of useful yarns are those having a denier to filament ratio of from 0.1 to 10, a denier of 15 to 250 with filament counts ranging from 10 to 250. Typically, the fabrics used for clean room wipers have a weight of 1 to 9 ounces per square yard. (Column 2, lines 54-61) Further, the reference teaches that the geometric shape of the clean room wiper can be squared or any shape may be employed. (Column 3, lines 53-57)

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The MORIN et al. reference further teaches that the primary tests for contamination associated with clean room wipers are those measuring particles, unspecified extractable matter, and individual ionic constituents. The amount of extractable contamination associated with a clean room wiper is determined by extracting the wiper and the organic and inorganic non-volatile residue may be further analyzed. (Column 4, lines 44-65) The reference further discloses that by following the process of their invention it is possible to reduce non-volatile residues to less than 0.005 grams/meters<sup>2</sup>, and even less than 0.003 grams/meters<sup>2</sup> as measured by short-term extraction. (Column 7, lines 5-8)

Since MORIN et al. teaches the importance of having reduced non-volatile residues in a clean room wiper and also teaches the use of polyester yarns, it is reasonable to presume that MORIN et al.'s invention would provide polyester that is substantially free of inorganic ionic additives in order to provide a wiper with reduced non-volatile residues. (As disclosed above)

Since MORIN et al. is also directed to wipers; the purpose disclosed by MORIN et al. would have been recognized in the pertinent art of PALEY et al. and LANGLEY.

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the clean room wiper and provide it with a method of heat setting the fabric at a temperature of 300°F or less with the motivation of providing it with dimensional stability and to provide a polyester fabric with low particulate since it is believed that by heating the polyester above 300°F causes low molecular weight polymers or bloomers to blossom to the surface of the polyester fibers, where they crystallize into small particles as disclosed by MORIN et al. (Column 2, lines 16-20 and Column 3, line 28).



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7. Claims 4, 18 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over PALEY et al. and ROCKWELL, Jr. in view of MORIN et al. (US 6,189,189).

PALEY et al. and ROCKWELL, Jr. fail to teach heat setting the textile fabric at a temperature of from 180 to 300 degrees Fahrenheit.

MORIN et al. discloses a method of manufacturing a polyester textile fabric having a relatively low level of particulate contaminated and high absorbency is provided by heat setting the fabric at a temperature of 300°F or less. (Abstract)

The reference teaches a method of manufacturing a textile fabric for use in a clean room having the steps of constructing a knitted or woven fabric from polyester yarn, heat setting the fabric at a temperature of from 180° to 300° F, and cutting the fabric to form the desired article; wherein the polyester fiber has not been heated above the temperature of 300°F. (Column 2, lines 10-14)

The reference also teaches that the wipers of their invention may be constructed from woven or knitted polyester fibers, preferably fibers of poly (ethylene terephthalate). It is also preferable to construct the fabrics from continuous filament, polyester yarn. Examples of useful yarns are those having a denier to filament ratio of from 0.1 to 10, a denier of 15 to 250 with filament counts ranging from 10 to 250. Typically, the fabrics used for clean room wipers have a weight of 1 to 9 ounces per square yard. (Column 2, lines 54-61) Further, the reference teaches that the geometric shape of the clean room wiper can be squared or any shape may be employed. (Column 3, lines 53-57)

The MORIN et al. reference further teaches that the primary tests for contamination associated with clean room wipers are those measuring particles, unspecified extractable matter,

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and individual ionic constituents. The amount of extractable contamination associated with a clean room wiper is determined by extracting the wiper and the organic and inorganic non-volatile residue may be further analyzed. (Column 4, lines 44-65) The reference further discloses that by following the process of their invention it is possible to reduce non-volatile residues to less than 0.005 grams/meters<sup>2</sup>, and even less than 0.003 grams/meters<sup>2</sup> as measured by short-term extraction. (Column 7, lines 5-8)

Since MORIN et al. teaches the importance of having reduced non-volatile residues in a clean room wiper and also teaches the use of polyester yarns, it is reasonable to presume that MORIN et al.'s invention would provide polyester that is substantially free of inorganic ionic additives in order to provide a wiper with reduced non-volatile residues. (As disclosed above)

Since MORIN et al. is also directed to wipers; the purpose disclosed by MORIN et al. would have been recognized in the pertinent art of PALEY et al. and ROCKWELL, Jr.

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the clean room wiper and provide it with a method of heat setting the fabric at a temperature of 300°F or less with the motivation of providing it with dimensional stability and to provide a polyester fabric with low particulate since it is believed that by heating the polyester above 300°F causes low molecular weight polymers or bloomers to blossom to the surface of the polyester fibers, where they crystallize into small particles as disclosed by MORIN et al. (Column 2, lines 16-20 and Column 3, line 28).

8. Claims 5-10 and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over PALEY et al., LANGLEY and MORIN et al as applied to claims 1-3 and 15-17 above, and further in view of DEAN et al. (US 6,139,954).

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The prior art cited of PALEY, LANGLEY and MORIN is silent to the use of polyester free of inorganic additives.

DEAN et al. teaches fiber made from polyesters used as binder fibers for nonwovens, textile and industrial yarns and fabrics. The polyester taught by DEAN et al. does not contain any antimony catalytic materials (Claim 11) and it teaches that these polymers are clear and non-opaque. (Column 3, lines 14-20).

Since it is known from the prior art that polyester is usually manufactured using metallic catalysts, usually compounds of antimony or aluminum, in finite amounts. And that also delusterants such as titanium dioxide are often applied to alter the appearance of the completed product. DEAN et al.'s polyester will equate to the claimed polyester with substantially free ionic additives.

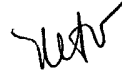
Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the cleanroom wiper and provide it with a polyester that does not contain any antimony catalytic materials and that is clear and non-opaque with the motivation of avoiding having particles shed from polyester wipers that contain these metallic contaminants.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Norca L. Torres-Velazquez whose telephone number is 571-272-1484. The examiner can normally be reached on Monday-Thursday 8:00-4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Norca L. Torres-Velazquez  
Examiner  
Art Unit 1771

October 7, 2004



TERREL MORRIS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700